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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,417	08/19/2000	Antoni Gil Miguel	60001011z130	8231

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EXAMINER

NGUYEN, MADELEINE ANH VINH

ART UNIT PAPER NUMBER

2626

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/642,417

Applicant(s)

MIGUEL, ANTONI GIL

Examiner

Madeleine AV Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 27-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10, 12-23 is/are rejected.
- 7) ☒ Claim(s) 4-6, 11 and 24-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-26, in the reply filed on May 24, 2004 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 states, in line 12-13, "the first nonzero number is different from the first nonzero number" which is indefinite. Clarification is needed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 7-10, 12-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borrell et al (US Patent No. 6,690,485).

Concerning claim 1, Borrell et al discloses an apparatus for incremental printing of an image (Fig.4) comprising means for addressing a region of the image at less than full coverage; means for adding further colorant quanta to selected pixels already receiving said colorant as part of the less-than-full coverage within the region; whereby, within the region the amount of the colorant printed in some pixels is zero, in others is a first nonzero number of colorant quanta, and in still others is a second non-zero number of colorant quanta; means for printing the image including the region with the added further quanta.

Borrell does not specifically teach that the first nonzero number is different from the second nonzero number. However, Borrell et al teaches a second printing of same colorant distribution which add colorant in positions that are selected rather than merely making an entire image darker (col. 9, lines 57-64). For instance, Borrell discloses means for analyzing pixels of the data array to identify areas of the data array that are locally dense and for applying additional colorant to identified locally dense areas and the passes can be more than 2. Thus, not all the nonzero number of colorant quanta is the same since the amount of passes and color quanta are different in different areas (col. 9, lines 44-67; col. 10, lines 17-24, lines 55-67; col. 11, lines 20-24). It would have been obvious to one skilled in the art at the time the invention was made to consider that the amount of the nonzero number of colorant quanta printed in some pixels is different from others since Borrell teaches that a significant additional amount of data processing occurs not of all dots but only for those dots that are identified as proplection candidates (col. 12, lines 59-63).

Concerning claim 2, Borrell et al further teaches means for establishing a ratio of number of added colorant pixels to total number of addressed pixels and means for setting a ratio to a value below one-half (col. 15, lines 10-20).

Concerning claim 3, Borrell does not directly teach that the setting ratio is between 0.15 and 0.4 inclusive. However, Borrell further teaches “the augmented-response curve has been constrained to raise the maximum output intensity by no more than that of 49% increment. Actually the constraint is by no means absolute, and augmentation arrays can be prepared to effect virtually an increment desired” (col. 15, lines 10-20). Borrell et al further teaches “a dot is augmented if its position matches that of a gray dot in a so-called “augmentation array” corresponding to a desired augmentation density. The system selects the desired density by choosing-either automatically or under manual control by a human operator-one of a ten available arrays.” (col. 16, lines 46-52). It would have been obvious to one skilled in the art at the time the invention was made to consider the setting of ratio value between 0.15 and 0.4 inclusive as claimed since Borrell teaches that the augmentation arrays can be prepared to any increment desired wherein the value between 0.15-0.4 is in the range of less than 0.5 (or 50%).

Claim 7 is method claim of apparatus claim 1. Claim 7 is rejected for the same rationales set forth for claim 1.

Concerning claims 8, 9-10, 12-21, Borrell et al further teaches that the full coverage is approximately one colorant quantum per printer pixel, on average (col. 6, lines 4-8; col. 16, lines 4-11); each colorant quantum forms in the printed image a roughly circular dot of diameter approximately equal to the length of a diagonal across a single printer pixel (Fig.2a); said full coverage is approximately one-half colorant quantum per printer pixel, on average (Fig.3); the

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full coverage is between one-half and one colorant quanta per printer pixel, on average (col. 6, lines 4-52); each colorant quantum forms in the printed image a roughly circular dots of diameter between one-half and one times the height or between one-half and one times the width of a single printer pixel (Fig.2); in another region of the image, printing an area fill at less than double coverage; and within the other region, adding further colorant to selected pixels already receiving colorant as part of the area fill; the double coverage is approximately between one and two colorant quanta per printed pixel, on average; each colorant quantum forms in the printed image a roughly circular dot of diameter approximately equal to the length of a diagonal across a single printer pixel (Fig.2a); the double coverage is approximately one colorant quanta per printer pixel, on average; maintaining a particular ratio between the still other pixels and the pixels receiving colorant as part of the less-than-full coverage within the region (col. 2, line 46 – col. 3, line 43; col. 5, lines 5-22; col. 6, line 4 – 7, line 21; col. 12, line 64 – col. 13, line 63; col. 14, line 56 – col. 15, line 50; col. 16, line 31 – col. 17, line 2).

Claims 22-23 are rejected as claims 1-3. Borrell et al further teaches that the steps of establishing a ratio and printing a region of the image are automatically done (col.16, lines 46-52).

Allowable Subject Matter

6. Claims 4-6, 11, 24-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is an Examiner's Statement of Reasons for Allowance: Claims 4-6, 11, 24-26 are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior art which teaches an apparatus as in claims 1, 7-10, 12-13 comprises means for or step of accepting a human operator manual selection to trade off banding robustness against granularity, wherein each colorant quantum forms in the printed image a roughly circular dot of diameter substantially equal to twice the height or twice the width of a single printer pixel.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

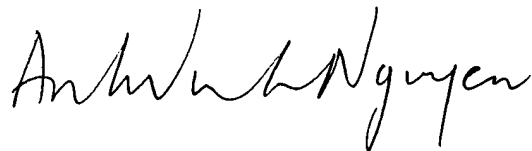
- a. Granger (US Patent No. 5,991,511) discloses an appearance based technique for rendering colors on an output device.
- b. Askeland et al (US Patent No. 6,441,922) discloses a reduction of banding in incremental printing through selection among colorimetric equivalents.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Madeleine AV Nguyen whose telephone number is 703 305-4860. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A Williams can be reached on 703 305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Madeleine AV Nguyen
Primary Examiner
Art Unit 2626

July 15, 2004